FACTS FOR MOTOR CAR BUYERS

(No. 2)

Facts—not opinions—are the foundation and basis of all enlightened knowledge. Here are some facts concerning automobile values and prices which explain why and how Studebaker offers low prices and high quality in its cars.

The Automobile

The automobile is the highest type of moving vehicle, either drawn or self-propelled. It is a highly developed machine, containing three thousand separate parts—more moving or frictional parts than a railroad locomotive. The locomotive runs over a smooth track; the automobile is driven over rough roads with sharp turns and grades; it is subject to far more wear and tear than the locomotive. Obviously, it must then be necessary that each one of the three thousand automobile parts, both moving and stationary, fit, co-operate and function with the greatest possible precision. The quality of the automobile depends entirely on the quality of the raw material, and the skill and experience with which it is designed and manufactured. The locomotive at all times is operated and cared for by experienced engineers and skilled mechanics. Automobiles are operated by owners who sometimes possess only limited mechanical ability, therefore an automobile must be designed and manufactured to meet every emergency of service and to withstand the abuse and neglect of unskillful operation.

Who Makes Automobiles?

There are over one hundred concerns "making" automobiles in this country, of which about ten are manufacturers, while the others are "assemblers."

The manufacturer owns and operates a complete manufacturing plant consisting of an extensive engineering and experimental department and a chemical laboratory; a power plant; foundry, forge shop, machine shop, stamping plant, body shop, trim shop, paint shop, and assembling departments.

The assembler either owns or rents a plant consisting usually of a bare building without power plant and without machinery, but equipped simply with assembling benches, forms and racks and stock rooms for the finished parts which he purchases from parts manufacturers or middlemen. He "makes" automobiles by putting these parts together in his assembling department.

Excessive Cost of Assembled Automobiles

Practically all manufacturers as well as assemblers buy finished parts from middlemen, such as wheels, tires, electrical equipment and some minor parts, and therefore the costs of both the manufacturer and the assembler are on a par for these parts, but these parts constitute less than 20% of the cost of an automobile. Other parts constitute about 80% of the cost of the automobile, the engine, axles, transmission, differential, steering gear, body and top making up most of the 80%. Hence, a manufacturer who manufactures these parts from raw materials in his own plants roughly speaking is making 80% of his car, whereas the assembler who buys them from parts manufacturers is purchasing from middlemen practically 100% of his car.

Studebaker manufactures in its own plants all of its engines, axles, transmissions, differentials, steering gears, bodies and tops. Even some manufacturers buy bodies, axles and steering gears from middlemen.

Cost of Manufacture

Assuming a car costs $700, and deducting 20% or $140 for the parts both manufacturer and assembler buy from middlemen, the balance, or $560, represents the value which the manufacturer sells at only one profit, but which the assembler must buy at the parts makers' profit; and the parts maker asks an average profit on these parts at least 25% above manufacturing costs. This adds $140 to the cost of the $560 worth of parts which the assembler must buy, and on which he must still add a good substantial profit of his own.

The Selling Cost of Any Car

Consider the following table as the basis upon which the selling price of any car must be fixed:

Items which make up Selling Price	Mfrs. Cost	Assembler's Cost	Excess cost of Assembled Car
Factory Cost	$700	$840	$140
Administrative, advertising and selling and general expenses — say they are the same in both cases	80	80	
Discount from list allowed dealers, assuming 20% the maximum.	220	270	50
Maker's Profit	100	160	60
Totals	$1,100	$1,350 (Increase 23%)	$250

This illustration shows a selling price of $1,100 for the manufacturer's car and $1,350 for the assembler's car. The buyer must pay $250 (about 23%) more for the assembled car simply because it is an assembled car. The manufacturer gives his customer the benefit of the savings derived from manufacturing his own parts, whereas the assembler has to pay this excessive cost and put the burden on the customer.

Manufacturers' Advantages

It is well known within the automobile industry that large manufacturers, with **$10,000,000 to $15,000,000** invested in complete plants and ample capital and resources, purchase the most modern and expensive labor-saving machinery, and then in manufacturing their engines, steering gears, axles, transmissions, differentials, bodies, tops, etc., their costs are lower, if anything, than parts manufacturers' costs for the same articles.

Manufacturers producing 75,000 cars annually produce more parts of a specific type than any parts manufacturer produces. As a rule, parts manufacturers are not specialists in the sense that they make only one type of body or axle or engine. Although their total output may sometimes (but rarely) exceed the quantity of any large automobile manufacturer, they make numerous varieties, and hence do not obtain as low manufacturing costs as the large automobile manufacturer obtains.

Hence, the large automobile manufacturer produces his own parts at a lower cost than the parts manufacturer produces similar parts for an assembler who buys in small quantities, and it follows that the 23% excess cost of the assembler illustrated above is not exaggerated.

Another point is that the assembler, buying parts from numerous sources, and often the same part from several sources, cannot obtain the same precision of machining and assembling in the finished car which the large manufacturer obtains.

Still again, the assembler's profit per car is larger than the manufacturer's profit, because the assembler usually sells only a few thousand cars annually. The illustration shows that this profit is 60% more than the manufacturer receives, and we believe this percentage is not overstated. Also the dealer's discount is greater on the assembled car, because his list price is higher.

As stated above, out of a hundred automobile concerns selling cars in this country, about 90% are assemblers and only 10% manufacturers in the true sense of the term. This means that consumers are paying 23% **premium** to 90% of the automobile concerns in the country, over and above what they could buy the same cars for, and in fact, much better cars, from the large manufacturers.

Quantity Production of Automobiles

Vague statements are frequently made concerning the effect of quantity production in reducing manufacturing costs. To illustrate this truth to uninformed persons, it is necessary to state the **elements that enter into costs and selling prices of automobiles.** Many people will be astonished at the number of these elements. Primarily, the basic cost of an automobile is:

(1) The **raw material** contained in it.

(2) The **wages of the workmen** who fashion the material into a finished car. The sum of these two items is the prime cost and the **actual car value** the customer receives. All costs and expenses beyond these are of **little, if any, value** to him.

(3) Factory overhead expenses should be included providing the manufacturing methods are simple, direct and economical.

Factory overhead expenses include supplies, supervision and factory organization expenses which, according to the intelligence of the personnel, determine whether the output of the manufacturer is large or small, whether the proper material is purchased and at the right prices, whether the design of the car is correct and the manufacturing methods simple and effective. Hence, we may say that factory overhead expenses are a legitimate part of the actual car value received by the customer, and if we admit this, these three items, representing manufacturing cost, are all the **actual car value** the customer receives. In making up the selling price, however, **other items are added,** as follows:

(4) Administrative, advertising and selling and general expenses.

(5) Discount allowed automobile dealers who sell the customer and give him service afterwards.

(6) Manufacturer's or assembler's profit.

Quantity Production Distributes Expense

The total of these six items comprises the selling price. It may be astonishing, but it is true that every one of these six items must and does vary with production. Every small producer, **whether he is a manufacturer or an assembler,** necessarily suffers an increase in every one of these six items, and must therefore charge more for his car than the large producer.

Illustrating this, we will take the cars of a manufacturer (A) producing 75,000 cars per annum, and either a small manufacturer or the usual assembler (B) producing 10,000 cars.

Commencing with item (1), raw material, it should be obvious that (A) can obtain much lower prices than (B) for the same material, because his buying power and purchases are seven and a half times greater.

In item (2), labor, it is obvious that (A) can employ skilled mechanics in **specialized single** operations to a greater extent than (B), and consequently obtain better work and more work from the same men.

In item (3), factory overhead expenses, it is obvious that (A), owning the highest priced, most modern labor-saving machinery, can eliminate excessive labor and supervision; that expenses of non-productive departments, such as experimental, engineering, laboratory, purchasing, stores, etc., are much less per car than in the case of (B).

To illustrate, a machine that costs (A) $25,000, costs thirty-three and one-third cents on each automobile he turns out. It costs (B) two dollars and a half on each automobile he turns out.

The **same is true of salaries;** the salary of a $25,000 engineer employed by (A) adds only thirty-three and one-third cents to the cost of the car, whereas if (B) employs **a man of equal ability and salary,** his cost is $2.50 per car. The same excess cost for (B) occurs in the case of purchasing agents, inspectors, factory executives, superintendents, etc.

With an annual $5,000,000 factory overhead expense for (A), his cost per car **would be $66.67,** whereas a $3,000,000 overhead for (B) would be $300.00 per car.

Quantity Production Reduces Costs

Quantity production reduces the cost per car for item (4), **administrative, selling and advertising and general expenses,** in the same way. Supposing the annual expenses of (A) are $6,000,000, the cost is only $80 per car, which is much less than the average person imagines this charge to be.

In the illustration, we have allowed (B) $80 per car, which on a basis of 10,000 cars per annum, makes his expenses $800,000, which he can get through with if he maintains no branch offices but markets his cars through dealers only. In the case of item (5), quantity manufacturers (A) allow dealers **smaller percentages** of discount, usually running from 15% to 25% according to the size of the dealer, whereas smaller makers (B) allow from 20% to 40% discount, because their dealers sell fewer cars and must therefore receive a **greater discount per car** to make a profit. The expenses of dealers average about the same whether they handle a quantity production car or a small production car, and manifestly the dealers in the former case, selling seven and a half times more cars than in the latter case, can afford and actually do receive a less discount per car. Again, the dealer's discount, **at the same percentage,** amounts to more money, as the list price of the car increases. In the illustration it is shown as $220 on the $1,100 car (A) against $270 on the $1,350 car (B), using 20% in both cases, so that quantity production saves the buyer $50 on this item.

The Maker's Profit

What has been said regarding dealer's discount applies with equal force to item (6), **maker's profit,** which in the case of quantity production (A) rarely exceeds $100 per car, but in the case of small production (B) usually amounts to at least 60% more, because of the latter maker's smaller volume.

The large profits being made by small makers, which are a matter of public record as shown by annual reports of these companies, prove the truth of this statement. These profits often run from $300 to $400 per car for cars selling for less than $2,000, whereas no quantity manufacturer in this country (A) makes any such profit per car.

Any concern which buys its engines, axles, transmissions, differentials, steering gears, bodies and tops, parts comprising 80% of the cost of an automobile, from parts manufacturers, is necessarily taxing buyers about 23% premium because of this fact. This truth explains the difference in price of from $300 to $500 in different cars on the market of apparently the same value, and this truth is well recognized in the automobile industry.

OPEN CARS

FOUR Chassis	$ 785.00
FOUR Roadster	850.00
FOUR Touring Car	875.00
FOUR Landau Roadster	1,150.00
SIX Chassis	985.00
SIX Roadster	1,060.00
SIX Touring Car	1,085.00
SIX Landau Roadster	1,350.00

F. O. B. Detroit

Studebaker increased its output from 37,000 cars in 1914 to 45,000 in 1915 and from 45,000 in 1915 to 75,000 cars in 1916. In 1914 the price of the Six was $1575; in 1915, $1385 to $1450 and in 1916 $1085, and each year the car was better than the preceding year. These significant reductions in price were made possible only by the increase in production.

In the last fourteen months Studebaker has produced and sold more seven-passenger SIXES and more seven-passenger FOURS than any other manufacturer in the world for a like period, thus establishing Studebaker as the world's largest manufacturer of fine cars—

—*Builders of* Studebaker

South Bend, Ind. Detroit, Mich. Walkerville, Ont.

CLOSED CARS

SIX Touring Sedan	$1,700.00
SIX Coupé	1,750.00
SIX Limousine	2,600.00

COMMERCIAL CARS

Commercial Half Ton Chassis	785.00
Commercial Half Ton Express	850.00
Commercial Half Ton Panel	875.00
Commercial One Ton Express	1,200.00

F. O. B. Detroit

Coburn Motor Sales Corporation of Richmond

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